REMARKS

Claims 1-8 are pending in the application. All claims stand rejected under 35 U.S.C. §103(a) as obvious over applicant's admitted prior art in view of Bowen et al. (hereinafter "Bowen").

The present invention concerns demapping a SONET signal in the presence of Link Capacity Adjustment Scheme (LCAS). According to the invention, a SONET signal is processed to provide a deskewed data stream which is subsequently demapped to form packets which are buffered in a FIFO. The deskewed data is also typically buffered before demapping. The main concern of the invention is to minimize data loss due to SONET, VCG, or LCAS processing. This is accomplished by controlling the rate at which the demapper reads data out of the deskew FIFO and writes it to the packet FIFO. When the packet FIFO fullness is below a threshold, the demapper is operated at a rate faster than the SONET line rate and thus faster than the deskew FIFO is filling. When the packet FIFO fills to a threshold, the demapper is slowed to the SONET line rate. This prevents data loss due to SONET, VCG, or LCAS processing and avoids head of line blocking at the deskew FIFO. It does not prevent the packet FIFO from overflowing if the client interface is blocked.

Bowen is also concerned with flow control and buffer fullness but in a completely different way. Bowen summarizes their system broadly as being applicable in any part of a network where queue management is required. Bowen states "packets may be queued at

various stages of this process pending processing by a particular device resource." However, Bowen does not attempt to minimize data loss upstream of a buffer. Rather, Bowen's main concern is "to protect the [downstream] resource from overload under conditions of congestion." See, ¶33. Bowen adopts a prior art scheme known as BAT (Bandwidth Allocation Technology) and applies it to a system for balancing the ratio of TCP and UDP traffic which Bowen terms "responsive" and "non-responsive" flows. See, ¶2 and ¶35. As shown in Fig. 1 of Bowen, flows enter a queue manager 5 at an offered rate "O" and are written from the queue manager to a buffer 3 at a serviced rate "f". A buffer fullness indicator B(t) is coupled to the queue manager which adjusts the service rate f based in part on buffer fullness according to a relatively complex algorithm which is explained on page 4 of Bowen. Basically, the queue manager periodically calculates a "transmit fraction T" [emphasis added] and the service rate f is the product of the offered rate O and the transmit fraction T. T is calculated according to the equations shown in between paragraphs 35 and 36 on page 4 of Bowen. A close examination of those equations reveals that the value of T is never greater than 1. For example, in the case where the fullness indicator is asserted, T is the minimum of 1 and a function of the last value of T, i.e. cannot exceed 1. Thus, the speed adjustment made by the queue manager never reads flows faster than their offered rate.

Independent claims 1 and 5 have been amended to include the limitations of claims 2 and 6 respectively which clearly indicates that the demapper is run faster than the incoming SONET signal rate when the buffer is below a fullness threshold. As demonstrated above, Bowen never reads faster than the incoming line rate. The

Examiner's remarks regarding claims 2 and 6 and paragraph 36 of Bowen, fails to account for the fact that the function cited by the Examiner is the minimum of 1 and a function of the last value of T. Moreover, the claimed first rate is when the buffer is not filled above the threshold. The comparable condition in Bowen would be when $B(t) \neq 1$.

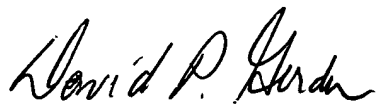
Claims 2 and 6 have been canceled. Claims 3 and 7 state that demapper operates at the SONET line rate when the packet FIFO is filled above the threshold. The formula cited by the Examiner as to the value of T when $B(t) \neq 1$ is inappropriate. The comparable condition in Bowen would be when $B(t)=1$.

Claims 4 and 8 state that the demapper rate when the packet FIFO is below threshold fullness is the maximum rate of the demapper which is higher than the incoming line rate. The cited portion of Bowen merely refers to minimum and maximum guaranteed service rates.

New claims 9-12 have been added to include the deskew buffer and the preference that the demapper operates at only two rates.

In light of all of the above, it is submitted that the claims are in order for allowance, and prompt allowance is earnestly requested. Should any issues remain outstanding, the Examiner is invited to call the undersigned attorney of record so that the case may proceed expeditiously to allowance.

Respectfully submitted,



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August 16, 2005